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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,063	06/22/2001	Corey E. Nislow	CYTOP003	6972
22434	7590	01/14/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP			MARSCHER, ARDIN H	
P.O. BOX 778			ART UNIT	
BERKELEY, CA 94704-0778			PAPER NUMBER	
			1631	

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/888,063

Applicant(s)

NISLOW ET AL.

Examiner

Ardin Marschel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-12, 14-27 and 29-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9-12, 14-20, 22, 23, 25-27, 29-35, 37-46 and 49-55 is/are rejected.
- 7) ☒ Claim(s) 6, 21, 24, 36, 47, 48 and 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) 6 sheets

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Applicants' arguments, filed 10/27/03, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

VAGUENESS AND INDEFINITENESS

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The metes and bounds of claim 9 are vague and indefinite because the limitations which are or are not meant for claim 9 are unclear due to claim 9 depending from canceled claim 8. Clarification via clearer claim wording is requested.

PRIOR ART

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1, 7, 10-12, 14-16, 22, 23, 25-27, 29-31, 37-42, and 49-55 are rejected under 35 U.S.C. 102(e)(2) as being clearly anticipated by Giuliano et al. (P/N 6,416,959).

In the abstract Giuliano et al. summarizes the optical analysis of cells for evaluating compounds that affect particular biological functions which is also generally the subject matter of the instant invention. A particular analysis method in the reference is set forth in column 37, line 10, through column 38, line 47, of two related but genetically different or modified mouse cell lines as they are affected by treatment with an apoptosis inducing drug. Fluorescent phenotypes (highlighting as in instant claims 22 and 54) of these cells were imaged via the image acquisition section of said columns 37-38 including quantitative representations of the phenotypes which were analyzed by calculational algorithms as also required in parts (a) and (b) of instant claim 1. These algorithms generated various quantitative parameters, such as average nuclear area, average nuclear perimeter etc. from comparisons of numerical values of the imaged cell phenotypes which is also the limitations of instant claims 10-12. In the Results section in column 38 the drug paclitaxel resulted in quantitative changes in cellular images, which is also a database of information as required in instant claim 14. The disclosure of such changes anticipates the comparison limitations as in part (c) of instant claim 1. Thus, instant claims 1 etc. are clearly anticipated by the reference. The above methodology being also in the form of a computer program product or computing device as in instant claims 16 and 31 are disclosed in the reference in column 6, line 54, through column 7, line 9. The application of the methods etc. of the reference to yeast

cells is also disclosed in column 76, lines 45-51, as required in certain instant claims. Specific cellular markers such as cell wall, genetic material, and cytoskeleton material for image analysis is disclosed in the reference in column 30, lines 3-62, as also required in instant claim 7 which combined with the yeast disclosure noted above is also anticipated. The comparison of phenotype database information and non-morphological information as in instant claims 15, 30, and 41 is also contemplated by the reference in columns 27-28, for example, where genetic information of the cells being analyzed are related to image data results.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 7, 10-12, 14-20, 22, 23, 25-27, 29-35, 37-46, and 49-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giuliano et al. (P/N 6,416,959); taken in view of Winzeler et al. [Science 285:901 (1999); already of record].

Giuliano et al. has been already summarized above as disclosing the basic instant invention. Giuliano et al., however, lacks specific description of the practice of

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deletion mutants generically or in yeast such as *Saccharomyces cerevisiae*. Giuliano et al., does suggest and motivate the usage of a wide variety of cell types which are useful in drug discovery in the above citation in column 76, lines 45-51, and via numerous examples of image analysis utilizing a variety of cell types including those which have been genetically modified as cell lines.

Winzeler et al. describes the usefulness of yeast, in particular, *Saccharomyces cerevisiae*, deletion mutants for evaluating phenotypic changes which are useful in screening for gene function via drug testing. Drug targeting in such testing is specifically set forth on page 901, third column, second full paragraph. Deletion mutants directed to deletion of non-essential gene or genes is also described in said paragraph as is also instantly claimed as in claim 4, for example.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to apply the Giuliano et al. imaging methodology, computer embodiments etc. to improve the analysis of drug target studies as in Winzeler et al. in order to obtain more detailed cellular information for such drug effect analysis thus resulting in the practice of the deletion mutant embodiments of the instant invention including the *Saccharomyces cerevisiae* cellular system study as in instant claims 2-5, for example.

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CLAIM OBJECTIONS

Claims 6, 21, 24, 36, 47, 48, and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

No claim is allowed.


Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703)308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703)308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (703)305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

January 9, 2004


ARDIN H. MARSCHEL
PRIMARY EXAMINER